CLAIMS

What is claimed is:

- 1 1. A method of instructing a computer program to self-optimize, said method comprising:
- 2 inputting commands into said computer program; and
- allowing a learning protocol in said computer program to determine an approximate
- 4 optimal policy of operation of said computer program based on said commands.
- 1 2. The method of claim 1, wherein said commands comprise learning instructions.
- 1 3. The method of claim 1, wherein said commands comprise operational choices for said
- 2 computer program to select from, wherein said operational choices include an approximate
- 3 optimal choice for optimizing said operation of the computer program.
- 1 4. The method of claim 3, wherein said commands comprise a selection command operable
- 2 for selecting any function in a list of instructions inputted into said computer program, wherein
- 3 said function provides a basis of making said approximate optimal choice.
- 1 5. The method of claim 3, wherein said commands comprise a rule command operable for
- 2 instructing said computer program of how to make said approximate optimal choice.

- 1 6. The method of claim 3, wherein said commands comprise a reward command operable
- 2 for instructing said computer program which of said operational choices results in said
- 3 approximate optimal choice for optimizing said operation of the computer program.
- 1 7. A method of autonomically optimizing a computer program, said method comprising:
- 2 specifying at least one choice point in said computer program;
- defining a set of alternate choices at each choice point; and
- 4 setting at least one feedback point for each choice point.
- 1 8. The method of claim 7, further comprising allowing a learning protocol in said computer
- 2 program determine an approximate optimal policy of operation of said computer program based
- 3 on said specifying, defining, and setting.
- 1 9. The method of claim 7, wherein said set of alternate choices comprise operational choices
- 2 for said computer program to select from, wherein said operational choices include an
- 3 approximate optimal choice for optimizing said operation of the computer program.
- 1 10. The method of claim 9, further comprising inputting a selection command into said
- 2 computer program, wherein said selection command is operable for selecting any function in a
- 3 list of instructions inputted into said computer program, wherein said function provides a basis of
- 4 making said approximate optimal choice.

- 1 11. The method of claim 9, further comprising inputting a rule command into said computer
- 2 program, wherein said rule command is operable for instructing said computer program of how
- 3 to make said approximate optimal choice.
- 1 12. The method of claim 9, further comprising inputting a reward command into said
- 2 computer program, wherein said reward command is operable for instructing said computer
- 3 program which of said operational choices results in said approximate optimal choice for
- 4 optimizing said operation of the computer program.
- 1 13. A program storage device readable by computer, tangibly embodying a program of
- 2 instructions executable by said computer to perform a method of instructing a computer program
- 3 to self-optimize, said method comprising:
- 4 inputting commands into said computer program; and
- 5 allowing a learning protocol in said computer program to determine an approximate
- 6 optimal policy of operation of said computer program based on said commands.
- 1 14. The program storage device of claim 13, wherein said commands comprise learning
- 2 instructions.
- 1 15. The program storage device of claim 13, wherein said commands comprise operational
- 2 choices for said computer program to select from, wherein said operational choices include an
- 3 approximate optimal choice for optimizing said operation of the computer program.

- 1 16. The program storage device of claim 15, wherein said commands comprise a selection
- 2 command operable for selecting any function in a list of instructions inputted into said computer
- 3 program, wherein said function provides a basis of making said approximate optimal choice.
- 1 17. The program storage device of claim 15, wherein said commands comprise a rule
- 2 command operable for instructing said computer program of how to make said approximate
- 3 optimal choice.
- 1 18. The program storage device of claim 15, wherein said commands comprise a reward
- 2 command operable for instructing said computer program which of said operational choices
- 3 results in said approximate optimal choice for optimizing said operation of the computer
- 4 program.
- 1 19. A system for instructing a computer program to self-optimize comprising:
- a compiler operable for inputting commands into said computer program; and
- a module operable for allowing a learning protocol in said computer program to
- 4 determine an approximate optimal policy of operation of said computer program based on said
- 5 commands.
- 1 20. The system of claim 19, wherein said commands comprise learning instructions.

- 1 21. The system of claim 19, wherein said commands comprise operational choices for said
- 2 computer program to select from, wherein said operational choices include an approximate
- 3 optimal choice for optimizing said operation of the computer program.
- 1 22. The system of claim 21, wherein said commands comprise a selection command operable
- 2 for selecting any function in a list of instructions inputted into said computer program, wherein
- 3 said function provides a basis of making said approximate optimal choice.
- 1 23. The system of claim 21, wherein said commands comprise a rule command operable for
- 2 instructing said computer program of how to make said approximate optimal choice.
- 1 24. The system of claim 21, wherein said commands comprise a reward command operable
- 2 for instructing said computer program which of said operational choices results in said
- 3 approximate optimal choice for optimizing said operation of the computer program.
- 1 25. A system of autonomically optimizing a computer program comprising:
- 2 means for specifying at least one choice point in said computer program;
- means for defining a set of alternate choices at each choice point; and
- 4 means for setting at least one feedback point for each choice point.